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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/556,821	04/21/2000	Yukio Sugita	Q58959	6402

7590 05/17/2005

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EXAMINER

GHULAMALI, QUTBUDDIN

ART UNIT PAPER NUMBER

2637

DATE MAILED: 05/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/556,821	<b>Applicant(s)</b> SUGITA, YUKIO	
	<b>Examiner</b> Qutub Ghulamali	<b>Art Unit</b> 2637	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 28 February 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 2-10 and 12-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 2, 12 and 21 is/are allowed.
- 6) ☒ Claim(s) 3-10 and 13-20, 22, 24 is/are rejected.
- 7) ☒ Claim(s) 23 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 April 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |                                                                                                                        |                                                                                         |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                                                       | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____                                                |

## DETAILED ACTION

### Acknowledgement

1. This Office Action is responsive to the Amendment filed on 02/28/2005.

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) The invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 3-10, 13-20, 22 and 24 are rejected under 35 U.S.C. 102(e) as being anticipated by Roylance et al (US Patent No. 6,390,579).

Regarding claims 3 and 4, Roylance discloses (fig. 1) a pulse width modulator device (10) comprising:

A clock generating device, which generates a first clock signal (col. 3, lines 54-67; col. 4, lines 4-55);

an operation device, which operates the first, clock signal and generates at least one processing clock signal whose phase is different than a phase of the first clock signal (col. 4, lines 22-55);

and

a pulse width modulating signal output device which makes a pulse of a pulse width modulating signal rise synchronously with one of the first clock signal and the processing clock signal generated by said operation device, and makes the pulse of the pulse width modulating signal fall synchronously with a remaining one of the first clock signal and the processing clock signal generated by said operation device (col. 11, lines 48-65; col. 16, lines 25-55); wherein said operation device is a delay device (plurality) which delays the first clock signal by a predetermined period of time and generates a second clock signal which is delayed by the predetermined period of time (see fig. 4; col. 9, lines 40-67; col. 10, lines 1-17).

Regarding claim 5, Roylance discloses (fig. 1) a pulse width modulator device (10) comprising:

a clock generating device, which generates a first clock signal (col. 3, lines 54-67; col. 4, lines 4-55);

an operation device which operates the first clock signal and generates at least one processing clock signal whose phase is different than a phase of the first clock signal (col. 4, lines 22-55); and

a pulse width modulating signal output device which makes a pulse of a pulse width modulating signal rise synchronously with one of the first clock signal and the processing clock signal generated by said operation device, and makes the pulse of the pulse width modulating signal fall synchronously with a remaining one of the first clock signal and the processing clock signal generated by said operation device (col. 11, lines 48-65; col. 16, lines 25-55); wherein the first clock signal generated by said clock generating device has a rectangular waveform, and said

operation device is an inverting device which inverts the first clock signal and generates a second clock signal (see figs. 3, 5; col. 9, lines 10-30).

As per claim 6, Roylance discloses operation device has delay devices (26) which delays the second clock signal by a predetermine period of time and generates a third clock signal (72) delayed by a predetermined period of time (see fig. 4; col. 40-67).

Regarding claims 7, 13, 14 and 17, Roylance discloses:

(a) a pulse width modulating device include,

(i) a clock generating device, which generates a first clock signal (col. 3, lines 54-67; col. 4, lines 4-55);

(ii) an operation device which operates the first clock signal and generates at least one processing clock signal whose phase is different than a phase of the first clock signal (col. 4, lines 22-55);  
and

(iii) a pulse width modulating signal output device which makes a pulse of a pulse width modulating signal rise synchronously with one of the first clock signal and the processing clock signal generated by said operation device, and makes the pulse of the pulse width modulating signal fall synchronously with a remaining one of the first clock signal and the processing clock signal generated by said operation device (col. 11, lines 48-65; col. 16, lines 25-55);

(b) a light source (96) for exposure which emits light in accordance with a pulse width of respective pulses of the pulse width modulating signal outputted by said pulse width modulating signal outputting device provided at said pulse width modulating device (see fig. 10; col. 16, lines 55-67; col. 17, lines 1-4).

As per claims 8, 18, 9 and 19, see discussion with reference to claim 3 regarding delay devices.

Regarding claims 10 and 20, see discussion with reference to claim 5 regarding rectangular waveform and device, which inverts the clock signal.

With reference to claim 15, Roylance discloses:

- (a) generating a first clock signal (col. 3, lines 54-67; col. 4, lines 4-55);
  - (b) operating the first clock signal and generating at least one clock signal whose phase is different than a phase of the first clock signal (col. 4, lines 22-55); and
  - (c) making a pulse of a pulse width modulating signal rise synchronously with one of the first clock signal and the clock signal generated in-step (b), and making the pulse of the pulse width modulating signal fall synchronously with a remaining one of the first clock signal and the clock signal generated in step (b) (col. 11, lines 48-65; col. 16, lines 25-55);
- wherein the first clock signal generated in step (a) has a rectangular waveform, and in step (b), the first clock signal is inverted and a second clock signal is generated (col. (see figs, 3, 5; col. 9, lines 10-30).

As per claim 16, Roylance discloses, a pulse width modulating further comprising the step of:  
in step (b), delaying the second clock signal by a predetermined period of time and generating a third clock signal, which is delayed by the predetermined period of time (see fig. 4; col. 40-67).

Regarding claim 22 Roylance discloses (fig. 1) a pulse width modulator device (10) comprising:

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a clock generating device, which generates a first clock signal (col. 3, lines 54-67; col. 4, lines 4-55);

an operation device which operates the first clock signal and generates at least one processing clock signal whose phase is different than a phase of the first clock signal (col. 4, lines 22-55);

and

a pulse width modulating signal output device which makes a pulse of a pulse width modulating signal rise synchronously with one of the first clock signal and the processing clock signal generated by said operation device, and makes the pulse of the pulse width modulating signal fall synchronously with a remaining one of the first clock signal and the processing clock signal generated by said operation device (col. 11, lines 48-65; col. 16, lines 25-55);

wherein the pulse width modulating signal output device comprises an R-S flip-flop (see col. 4, lines 37-55).

Regarding claim 24 Roylance discloses wherein the pulse width modulating signal output device comprises an R-S flip-flop (see col. 4, lines 37-55).

*Allowable Subject Matter*

4. Claims 2, 12, 21 allowed.
5. Claim 23 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

*Conclusion*

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Qutub Ghulamali whose telephone number is (571) 272-3014. The examiner can normally be reached on Monday-Friday from 8:00AM - 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on (571) 272-2988. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

QG.  
May 13, 2005.

A handwritten signature in black ink, appearing to read 'Jay K. Patel', with a stylized flourish at the end.

JAY K. PATEL  
SUPERVISORY PATENT EXAMINER